

**CLAIMS**

1. A system for an internal combustion engine (10) designed to be operated with a fuel  
5 mixed with a lubricant characterized in that it comprises:  
- a detector (16) arranged to detect the presence of a specific additive in the lubricant  
mixed fuel,  
- an electronic module (24) arranged to compare the detected presence of an additive  
with a given threshold value and designed so that; if the lubricant has not been mixed in  
10 the fuel or is mixed into the fuel, in an amount that is lower than an, via the additive  
against the threshold value correlated, amount, by means of an indicator (30) indicate a  
lack of lubricant in the fuel and/or with a connection (26) to an ignition system or an  
injection system (11) for the engine (10) prevent or change the operation of the internal  
combustion engine if such lack of lubricant is at hand in the fuel  
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2. A system according to claim 1, characterized in that said threshold value is  
adjustable for a correlation against the type of additive and the limits for a mixing ratio  
between fuel, lubricant and additive
- 20 3. A system according to claim 1 or 2, characterized in that said electronic  
module (24) via said connection (26) to the ignition system (11) of the internal  
combustion engine (10), is arranged to limit the speed (RPM) of the engine, preferably  
to only allow an idle speed, if a lack of lubricant is at hand in the fuel.
- 25 4. A system according to anyone of the above claims, characterized in that said  
additive is an additive that changes, preferably increases, an electric conductivity or  
capacitance of a mixture of fuel and lubricant whereas said detector (16) is designed to  
detect the presence of the given additive in the lubricant mixed fuel in terms of electric  
conductivity or capacitance and whereas said threshold value is a threshold value for  
30 conductivity or capacitance.
5. A system according to claim 4, characterized in that said detector (16)  
comprises two electrodes for the measurement of conductivity and capacitance.

6. A system according to any of the above claims, characterized in that said additive, is an additive that changes an optical property in the mixture of fuel and lubricant, whereas said detector (16) is designed to detect the presence of a given additive in the lubricant mixed fuel in terms of this optical property and whereas said threshold value is a threshold value in terms of this optical property.

7. A system in accordance to claim 6, characterized in that said detector comprises an optical sensor, preferably in the form of a light emitting diode (18) and a phototransistor (20) whereas the said additive is a colorant adapted to absorb light in the wavelength or spectrum of the light emitting diode.

8. A method relating to the operation of an internal combustion engine (10) that is powered by a fuel mixed with a lubricant, characterized in that;

- a presence of a given additive in the lubricant mixed fuel is detected (16)
- the detected presence of the additive is compared (24) with a set threshold value,

whereas it, when the lubricant is not mixed in the fuel or has been mixed into the fuel in an amount lower than one through the additive against the threshold value correlated amount, indicates (30) that a lack of lubricant is at hand in the fuel and/or whereas the internal combustion engine operation is prevented or changed if said lack of lubricant is at hand in the fuel.

9. A method according to claim 8, characterized in that said threshold value is adjustable for correlation against the type of additive and the limits for a mixing ratio between the fuel, lubricant and additive.

10. A method according to claim 8 or 9, characterized in that the RPM of the engine (10) is limited (26) preferably that only the idle speed is allowed, if a lack of lubricant is at hand in the fuel.

11. A method according to any of the claims 8–10, characterized in that said additive is an additive that modifies, preferably increases, an electric conductivity or capacitance of the mixture of fuel and lubricant whereas the detection (16) of the presence of said additive in the lubricant mixed fuel is measured in terms of electrical

conductivity or capacitance and whereas said threshold value is a threshold value in terms of electrical conductivity or capacitance.

12. A method according to any of the claims 8–11, characterized in that said  
5 additive is an additive that changes an optical property of a mixture of fuel and lubricant, whereas the detection (16) of the presence of the said additive in the lubricant mixed fuel is measured in terms of this optical property and whereas said threshold value is a threshold value in terms of this optical property.